

## ATTACHMENT A

### Amendments to the Claims

*This listing of claims will replace all prior versions, and listings, of claims in the application.*

1. (Currently Amended) Sound-absorbing device ~~for placement which is placed~~ in a sound field in air, ~~and for~~ absorbing acoustic energy from said sound field at least in a predetermined low-frequency region, the device comprising:  
a body containing one or more cavities ~~(4, 12, 13), where at least a portion of the~~  
said body including an outer surface of the body with at least a portion thereof is  
in contact with said sound field, ~~and where~~  
said body is ~~being~~ inflatable/extendable and collapsible/compressible; ~~and~~  
a means for actively varying a volume in said one or more cavities during the supply  
of a gas to or the removal of the gas from said one or more cavities ~~at least one cavity~~  
~~(4, 12, 13), respectively, whereby in order to vary~~ the absorption coefficient ( $\alpha$ ) and/or  
the resonance frequency of said body ~~can be varied, thus and hence for actively~~  
determining the absorption coefficient and/or the frequency region in which maximum  
absorption ~~will takes~~ place.
2. (Original) Sound-absorbing device according to claim 1, where said low-frequency region has an upper frequency limit of approximately 200 Hz.
3. (Original) Sound-absorbing device according to claim 1, where said low-frequency region is 50 Hz to 125 Hz.
4. (Currently Amended) Sound-absorbing device according to claim 1, where ~~the a~~  
material of said body is chosen such that there exists a substantial impedance match  
between the body and the surrounding sound field, at least in said low-frequency region.

5. (Currently Amended) Sound-absorbing device according to claim 1, where said gas is supplied to/removed from said at least one cavity ~~(4, 12, 13)~~ via a valve provided in a conduit between said at least one cavity and a source of that gas, where the valve is provided with means for remote-controlling of the valve.
6. (Currently Amended) Sound-absorbing device according to ~~any of the preceding claims~~ claim 1, where the body is furthermore provided with attachment means ~~(32, 37)~~ for engagement with corresponding attachment means provided on one or more sound-absorbing devices ~~according to any of the preceding claims~~.
7. (Currently Amended) Sound-absorbing device according to claim 1, where at least one of said one or more ~~at least one~~ cavities ~~(4, 12, 13)~~ is provided with sound-absorbing material ~~(3)~~ within said cavity.
8. (Currently Amended) Sound-absorbing device according to claim 1, where ~~said at least one~~ of said one or more cavities ~~cavity~~ is provided with internal self-inflating/self-expanding means.
9. (Currently Amended) Sound-absorbing device according to claim 1, where said body is ~~bodies are~~ surrounded by an inflatable/expandable and collapsible/compressible frame structure ~~(8, 15', 15'')~~ for providing sufficient rigidity and/or the desired shape and/or the desired depth to said body~~bodies~~.
10. (Currently Amended) Sound-absorbing assembly comprising at least one sound-absorbing device according to ~~any of the preceding claims 1 to 9~~ claim 1, the assembly comprising a support or suspension structure ~~(41)~~ provided with roller means ~~(43)~~ upon which said devices can be wound and drive means for rotating said roller means ~~(43)~~.
11. (Currently Amended) Sound-absorbing assembly according to claim 10 furthermore comprising at least one high-frequency absorbing means ~~(46)~~ supported on

the support or suspension structure (41)-on one or more second roller means (47)-upon which said high-frequency absorbing means (46)-can be wound.

12. (Currently Amended) Sound-absorbing assembly according to claim 10 ~~or 11~~, where the support or suspension structure (41)-is formed as a housing for accommodating the low and high-frequency absorbing devices in an inactive state of the assembly.

13. (Currently Amended) Sound-absorbing assembly according to claim 10, ~~11 or 12~~, where the assembly furthermore is provided with means for automatically winding up at least the low-frequency absorbing device (42)-in case of fire.

14. (Currently Amended) Sound-absorbing assembly according to claim 11, where said high-frequency absorbing device (46)-is a sheet of fabric of a material with sufficient flow resistance to provide high-frequency acoustic absorption.

15. (Currently Amended) A method for absorbing sound from a sound field in air, comprising the steps of:

introducing introduction of at least one at least partially resilient body,

~~characterised~~characterized by an acoustic mass and compliance determining a resonance frequency and hence an active frequency region for substantial absorption of acoustic energy from said sound field and an outer surface exhibiting a chosen acoustic resistance, into said sound field~~medium~~, such that said sound field~~medium~~ is in contact with at least a portion of an outer surface of said at least one body, whereby said at least one body ~~will absorb~~s acoustic energy from said sound field, and

~~characterised in that~~

actively varying a volume of said at least one of said bodies which is/are

inflatable/extendable and collapsible/compressible during ~~the~~a supply of a gas to or ~~the removal of the gas~~ from said at least body~~one cavity~~, respectively, whereby the absorption coefficient ( $\alpha$ ) and/or the resonance frequency of said body ~~can be is~~

varied, ~~thus and hence~~ actively determining the frequency region in which maximum absorption ~~will takes~~ place.

16. (Currently Amended) A method according to claim 15, ~~characterised~~ characterized in that the acoustic resistance of those portions of said one or more bodies that is/are in contact with said sound field is chosen such that a substantial impedance match exists between these portions and the surrounding sound field.

17. (Currently Amended) A method according to claim 15 ~~or 16~~, where the resonance frequency  $f_0$ , acoustic resistance ratio  $\mu$ , maximum absorption coefficient  $\alpha_{\max}$  and absorption bandwidth  $B_r$  are given by

$$f_0 = \frac{c}{2\pi} \sqrt{\frac{\rho}{md}} \quad (1)$$

$$\mu = \frac{r_i}{r_s} \quad (2)$$

$$\alpha_{\max} = \frac{4\mu}{(1+\mu)^2} \quad (3)$$

$$\frac{B_r}{f_0} = (1+\mu) \sqrt{\frac{\rho d}{m}} \quad (4)$$

18. (Currently Amended) A method for reducing the reverberation time of a room at least in a low-frequency region from a given reverberation time  $\{T_{60}\}$  to a desired reverberation time  $\{T_{60,s}\}$  comprising the introduction of ~~one or more devices according to any of the preceding claims 1 to 9 claim 1~~, or one or more of the sound-absorbing assemblies according to ~~any of the preceding claims 10 to 14~~ into the room.

19. (Currently Amended) A method according to claim 18, where ~~the~~ a required total surface area  $S_s$  of said one or more bodies of said one or more assemblies is determined by the equation

$$\alpha = \frac{55.3V}{cS_s} \left( \frac{1}{T_{60}^s} - \frac{1}{T_{60}} \right) \quad (5)$$

where  $\alpha$  is the absorption coefficient of the absorbing device/devices,  $V$  is the volume of the room and  $c$  is the speed of sound.

20. (Currently Amended) A method according to claim 18, where said reduction of reverberation time predominantly takes place in a low-frequency region determined by a resonance frequency and absorption bandwidth determined ~~according to claim 17~~ where the resonance frequency  $f_0$ , acoustic resistance ratio  $\mu$ , maximum absorption coefficient  $\alpha_{\max}$  and absorption bandwidth  $B_r$  are given by

$$f_0 = \frac{c}{2\pi} \sqrt{\frac{\rho}{md}} \quad (1)$$

$$\mu = \frac{r_i}{r_s} \quad (2)$$

$$\alpha_{\max} = \frac{4\mu}{(1+\mu)^2} \quad (3)$$

$$\frac{B_r}{f_0} = (1+\mu) \sqrt{\frac{\rho d}{m}} \quad (4)$$

21. (Currently Amended) A system for reducing the reverberation time of a room comprising a plurality of sound-absorbing ~~devices~~ assemblies according to ~~any of the preceding claims 1 to 9~~ claim 10, ~~or/and a plurality of sound-absorbing assemblies according to any of the preceding claims 10 to 14~~, the system furthermore comprising conduits through which gas can be supplied from a source to each of said ~~devices~~ or/and assemblies either individually or in predetermined groups of said ~~devices or assemblies~~ and removed from these.

22. (Currently Amended) A system according to claim 21, where said ~~devices or/and~~ assemblies are provided with valve means for controlling the supply of gas to/removal of gas from said ~~devices or assemblies~~.

23. (Currently Amended) A system according to claim 22, where said valve means are remote controllable and where the system is furthermore provided with a central control device for controlling the degree of inflation/extension of said ~~devices or assemblies~~.

24. (Currently Amended) A system according to ~~any of the preceding claims 21 to 23~~ claim 21, where the system furthermore comprises means for measuring the reverberation time of a room in which the system is installed.

25. (Currently Amended) A system according to ~~any of the preceding claims 21 to 24~~ claim 21 furthermore comprising data storage means for storing for instance measured reverberation times and various corresponding parameters of the ~~devices or/and~~ assemblies.

26. (Currently Amended) A listening room, for instance to be used for the performance of live or recorded music, comprising ~~one or more of said sound-absorbing devices according to any of the preceding claims 1 to 9 claim 1, or/and one or more of said sound-absorbing assemblies according to any of the preceding claims 10 to 14, or/and said system according to any of the preceding claims 21 to 25.~~

27. (Currently Amended) The use of sound-absorbing devices according to ~~any of the preceding claims 1 to 9~~ claim 1 for altering the reverberation time of a room.

28. (Currently Amended) The use of sound-absorbing assemblies according to ~~any of the preceding claims 10 to 14~~ claim 10 for altering the reverberation time of a room.

29. (Currently Amended) The use of the system according to ~~any of the preceding claims 21 to 25~~ claim 21 for altering the reverberation time of a room.